



Appl. No. 10/017,182

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PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. (currently amended) A method for dynamically updating a property
2 | of a live object at one or more remote clients coupled to a network, comprising:
3 receiving a first message from a remote input source, the first
4 message identifying the live object and containing data for updating a property of the
5 live object;
6 | identifying a remote clients client in the one or more clients that have
7 has registered for updates to the live object, wherein the remote clients client is are
8 distributed on coupled to a the network; and
9 | routing a second message via the network to the registered client clients,
10 the second message identifying the live object and containing the data for updating
11 the property of the live object;
12 | wherein the registered client is configured clients are adapted to
13 process the data to cause the update to the property of the live object,
14 wherein the live object is included in a data representation at the
15 client.

1 2. (presently presented) The method of claim 1, wherein the live object
2 is identified by an object ID.

1 3. (presently presented) The method of claim 2, wherein the object ID
2 comprises a hierarchical namespace.

1 4. (presently presented) The method of claim 1, wherein the live object is
2 identified as a point in a document object model.

1 5. (presently presented) The method of claim 1, wherein the data for
2 updating the property of the live object identify the property relative to a point in a
3 document object model.

1 6. (currently amended) The method of claim 1, further comprising:
2 receiving a registration request from a the client, the registration
3 request identifying the live object with an object ID.

1 7. (currently amended) The method of claim 1, further comprising:
2 receiving a request from a the client for an activation module, the
3 activation module adapted to identify any live objects at the client; and providing the
4 activation module to the client.

1 8. (currently amended) The method of claim 1, wherein a the client
2 is ~~adapted~~ configured to generate a registration request registering for updates to
3 properties of live objects at the client.

1 9. (currently amended) The method of claim 1, wherein each the
2 registered client is ~~adapted~~ configured to generate executable code responsive to the
3 data in the second message and execute the executable code to cause the update to
4 the property of the live object.

1 10. (currently amended) The method of claim 1, wherein the data for
2 updating a property of the live object comprise an executable script and wherein each
3 the registered client is ~~adapted~~ configured to execute the executable script.

1 11. (presently presented) The method of claim 1, wherein the second
2 message identifies a handler for updating the property of the live object responsive to
3 the data in the second message.

1 12. (presently presented) The method of claim 11, wherein the second
2 message implicitly identifies the handler.

1 13. (canceled) The method of claim 11, wherein the second message
2 explicitly identifies the handler.

1 14. (currently amended) The method of claim 1, wherein the change to
2 the property of the identified live object is associated with a visual representation of
3 the object at a the client.

1 15. (currently amended) The method of claim 1, wherein the change to
2 the property of the identified live object is not associated with a visual representation
3 of the object at a the client.

1 16. (presently presented) The method of claim 1, further comprising:
2 processing the first message from a first format to a second format to
3 produce the second message.

1 17. (presently presented) The method of claim 1, wherein the first message
2 and the second message are identical.

1 18. (currently amended) A dynamic content routing network for enabling
2 updating a property of a live object at a client coupled to the network, comprising:
3 a node ~~for configured to receive~~ receiving a message from a remote
4 input source, the message identifying the live object and containing data for updating a
5 property of the live object, configured to determine ~~for maintaining a registry of the~~
6 ~~remote clients~~ client coupled to the network, the client having ~~that have~~ registered to
7 receive updates to properties of the live object, and ~~for routing~~ configured to route the
8 message to the registered client ~~clients~~;

9 wherein ~~each the~~ registered client is ~~adapted~~ configured to process the
10 data to cause the update to the property of the live object, wherein the live object is
11 included in a data representation at the registered client.

1 19. (presently presented) The routing network of claim 18, further comprising:
2 a gateway in communication with the node and the input source and
3 adapted to receive the message from the input source and deliver the message to the
4 node.

1 20. (presently presented) The routing network of claim 19, wherein there are
2 a plurality of gateways, further comprising:
3 a load balancer for balancing a load on the routing network by
4 distributing messages from the input source among the plurality of gateways.

1 21. (currently amended) The routing network of claim 18, wherein the node
2 is further adapted to receive registration request messages from the ~~clients~~client, the
3 registration request messages registering for updates to properties of the live object.

1 22. (currently amended) The routing network of claim 21, wherein there are a
2 plurality of nodes, further comprising:
3 a load balancer for balancing a load on the routing network by
4 distributing the registration request messages from the ~~clients~~client and one or more
5 additional clients among the plurality of nodes.

1 23. (currently amended) The routing network of claim 18, further
2 comprising:
3 an application server for serving an activation module to the
4 ~~clients~~client, the activation module adapted to enable identification of the live objects
5 object at the client.

1 24. (currently amended) The routing network of claim 23, wherein the

2 | activation module is further adapted to generate a registration request from a the client to
3 | the node for registering to receive updates to properties of the live object.

1 | 25. (currently amended) The routing network of claim 23, wherein the
2 | activation module is further adapted to receive the message routed to the registered
3 | ~~clients~~client and process the data to cause the update to the property of the live object.

1 | 26. (presently presented) The routing network of claim 18, further
2 | comprising:
3 | a queue module for holding messages from the input source that have
4 | been received but not yet processed by the node.

1 | 27. (currently amended) The routing network of claim 18, ~~wherein the~~ further
2 | comprising a registry maintained by the node, wherein the registry comprises:
3 | a data structure identifying live objects for which ~~clients~~ the client
4 | ~~hashave~~ registered, and an address of ~~each~~ the registered client.

1 | 28. (presently presented) The routing network of claim 18, wherein there are
2 | a plurality of nodes and wherein at least some of the nodes receive the message from the
3 | input source.

1 | 29. (presently presented) The routing network of claim 19, wherein there are
2 | a plurality of gateways and a plurality of nodes in each of a plurality of clusters and
3 | wherein each gateway within a cluster maintains a communications link with each node
4 | within the cluster and wherein each gateway within a cluster maintains a
5 | communication link with at least one gateway in each of the other clusters.

1 | 30. (currently amended) ~~A computer program product comprising a~~ A
2 | computer-readable medium having computer program code embodied therein for
3 | updating a ~~properties~~ property of a live objects ~~object~~ at a client coupled to the network,
4 | the computer program code adapted ~~configured~~ to cause a computing device to perform

the steps of:

identifying the live ~~objects-object~~ at the client;
receiving via ~~a-the~~ network an update message identifying ~~a-the~~ live
object at the client and containing data for updating ~~a-the~~ property of the live object;
and

processing the data to cause the update to the property of the live
object, wherein the live object is included in a data representation at the client.

31. (currently amended) The computer ~~program-product~~ readable medium of
claim 30, wherein the step of identifying the live ~~objects-object~~ at the client comprises
the step of:

analyzing a web page displayed at the client to identify object IDs of
live objects on the web page.

32. (currently amended) The computer readable medium ~~program-product~~ of
claim 30, wherein the step of identifying the live ~~objects-object~~ at the client comprises
the step of:

receiving data responsive to a solicitation of input, the data identifying
the live ~~objects-object~~ at the client.

33. (currently amended) The computer readable medium ~~program-product~~ of
claim 30, wherein the program code is further ~~adapted~~ configured to cause the
computing device to perform the step of:

sending via the network a registration message indicating the live
objects identified at the client to a remote routing network;
wherein the update message is received from the remote routing
network.

34. (currently amended) The computer readable medium ~~program-product~~ of
claim 30, wherein the program code is further configured to cause the computing device

3 adapted to perform the step of:

4 maintaining a connection with a remote routing network;
5 wherein the update message is received from the remote routing
6 network.

1 35. (currently amended) The computer readable medium ~~program product~~ of
2 claim 34, wherein the program code is further configured to cause the computing device
3 ~~adapted to perform the step of.~~

4 terminating the connection with the remote routing network
5 responsive to an action occurring at the client.

1 36. (presently presented) The computer readable medium ~~program product~~ of
2 claim 30, wherein the live object is identified as a point in a document object model.

1 37. (presently presented) The computer readable medium ~~program product~~ of
2 claim 30, wherein the step of processing the data to cause the update to the property of
3 the live object comprises the step of:

4 changing a property of a point in a document object model.

1 38. (currently amended) The computer readable medium ~~program product~~ of
2 claim 30, wherein the processing step comprises the steps of:

3 ~~generate~~ generating executable code responsive to the data in the
4 update message; and

5 executing the executable code to cause the update to the property of the
6 live object.

1 39. (presently presented) The computer readable medium ~~program product~~ of
2 claim 30, wherein the data for updating a property of the live object comprise an
3 executable script and wherein the processing step comprises the step of:

4 executing the executable script.

1 40.

(presently presented) The computer readable medium ~~program-product~~
2 of claim 30, wherein the update message specifies a handler for changing the property of
3 the live object responsive to the data in the update message.

1 41.

(presently presented) The computer readable medium ~~program-product~~
2 of claim 40, wherein the update message implicitly specifies the handler.

1 42.

(presently presented) The readable medium ~~computer program-product~~
2 of claim 40, wherein the update message explicitly specifies the handler.

1 43.

(presently presented) The readable medium ~~computer program-product~~ of
2 claim 30, wherein the step of processing the data to cause the update to the property of
3 the live object comprises the step of:
4 changing a property associated with a visual representation of the
5 identified live object.

1 44.

(presently presented) The computer readable medium ~~program-product~~ of
2 claim 30, wherein the step of processing the data to cause the update to the property of
3 the live object comprises the step of:
4 changing a property not associated with a visual representation of the
5 identified live object.

1 45.

(currently amended) A system for updating properties of live objects at a
2 plurality of ~~remote clients~~ coupled to a routing network, comprising:
3 ~~a~~the routing network in communication with the plurality of ~~remote~~
4 clients, the routing network ~~adapted~~configured to enable the plurality of clients to
5 register to receive updates to properties of live objects, to receive an update message
6 from a remote input source including data for updating a property of an identified
7 live object, and to route the update message to ~~the a remote clients~~ client in the
8 plurality of clients that ~~have~~has registered for the identified live object;

9 wherein ~~each~~ the registered client is ~~adapted~~ configured to process the
10 data to cause the update to the property of the live object, wherein the live object is
11 included in a data representation at the client.

1 46. (currently amended) The system of claim 45, wherein ~~each~~ each of the
2 plurality of clients ~~is configured to execute~~ executes an activation module adapted
3 to enable identification of live objects at ~~the~~ each client and register for updates to
4 properties of the identified live objects with the routing network.

1 47. (currently amended) The system of claim 46, the routing network is
2 further adapted to provide the activation module to each of the clients.

1 48. (currently amended) The system of claim 45, wherein the remote input
2 source is adapted to utilize a director console module to provide the update message to the
3 routing network.;

1 49. (presently presented) The system of claim 45, wherein the input source is
2 adapted to utilize a content management system module to provide the update message
3 to the routing network.

1 50. (new) A device for dynamically updating a property of a live object
2 at one or more clients coupled to a network, comprising:
3 logic configured to receive a first message from an input source, the
4 first message identifying the live object and containing data for updating a property of
5 the live object;
6 logic configured to identify a client in the one or more clients that has
7 registered for updates to the live object, wherein the client is coupled to the network;
8 and
9 logic configured to route a second message via the network to the
10 registered client, the second message identifying the live object and containing the
11 data for updating the property of the live object;

12 wherein the registered client is configured to process the data to
13 cause the update to the property of the live object,
14 wherein the live object is included in a data representation at the
15 client.

1 51. (new) The device of claim 50, wherein the live object is identified by an
2 object ID.

1 52. (new) The device of claim 51, wherein the object ID comprises a
2 hierarchical namespace.

1 53. (new) The device of claim 50, wherein the live object is identified as a
2 point in a document object model.

1 54. (new) The device of claim 50, wherein the data for updating the property of
2 the live object identify the property relative to a point in a document object model.

1 55. (new) The method of claim 50, wherein the data for updating a property
2 of the live object comprise an executable script and wherein the client is configured to execute
3 the executable script.

1 56. (new) The device of claim 50, wherein the change to the property of the
2 identified live object is associated with a visual representation of the object at the client.

1 57. (new) The device of claim 50, wherein the change to the property of the
2 identified live object is not associated with a visual representation of the object at the client.

1 58. (new) The device of claim 50, further comprising:
2 logic configured to process the first message from a first format to a
3 second format to produce the second message.

1 59. (new) The device of claim 50, wherein the first message and the second
2 message are identical.

1 60. (new) The device of claim 50, wherein the data representation comprises
2 a web page or an application program.

1 61. (new) A method for dynamically updating a property of a live object at
2 clients coupled to a network, comprising:

3 receiving a first message from an input source, the first message
4 identifying the live object and containing data for updating a property of the live
5 object;

6 identifying a plurality of clients that have registered for updates to the
7 live object, wherein the plurality of clients are distributed on the network; and

8 routing a second message via the network to the registered plurality of
9 clients, the second message identifying the live object and containing the data for
10 updating the property of the live object;

11 wherein the registered plurality of clients are configured to process
12 the data to cause the update to the property of the live object,

13 wherein the live object is included in a data representation at each
14 of the plurality of registered clients.

1 62. (new) The method of claim 1, wherein the data representation comprises a
2 web page or an application program.

1 63. (new) The routing network of claim 18, wherein the data representation
2 comprises a web page or an application program.

1 64. (new) The computer readable medium of claim 30, wherein the data
2 representation comprises a web page or an application program.

1 65. (new) The system of claim 45, wherein the data representation comprises
2 a web page or an application program.